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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,784	07/13/2001	Aroon Tungare	211147US99	1487
22850 7	7590 08/14/2002			
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC			EXAMINER	
FOURTH FLC			ERDEM, FAZLI	
.,	SON DAVIS HIGHWA I, VA 22202			
ARLINGTON			ART UNIT	PAPER NUMBER
			2826	
			DATE MAILED: 08/14/2002	!

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary Commonstrate Commonstrat			<u> </u>				
Examiner	••	Application No.	Applicant(s)				
Fazili Erdem 2826		09/903,784	TUNGARE ET AL.				
The MALING DATE of this communication appears on the cover sheet with the correspondence address — Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MALILING DATE OF THIS COMMUNICATION. Edenticate or time may be available under the provisions of 3 CFR 1.158(b). In one event, however, may a reply be finely filed Edenticated or the may be available under the provisions of 3 CFR 1.158(b). In one event, however, may a reply be finely filed If the period for reply specified above is feet shan thinty (00) days, as reply with the statutory minimum of thinty (00) days, will be considered timely. If the period for reply specified above, the reactions factory period will agrice St() (b) MONTH'S from the maling date of this communication. Final to reply whithe the sol or visualization period will appear and visualization become ALBANCONET (03 U.S.C. § 115). Responsive to communication (s) filed on 13 July 2001. 2a This action is FINAL. 2b ② This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4 ② Claim(s) 1-54 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5 □ Claim(s) is/are allowed. 6 ② Claim(s) is/are allowed. 6 ② Claim(s) is/are allowed. 6 ② Claim(s)	Oπice Action Summary	Examiner	Art Unit				
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	1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s)	5) Notice of Informal P					

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DETAILED ACTION

Allowable Subject Matter

1. Claims 5-9, 16-22, 27-31 and 38-44, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-4, 10-15, 23-26, 32-37, and 45-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grube (6,427,066) in view of Suzuki (6,229,159).

Regarding Claims 1-4, 10-15, 23-26, 32-37, and 45-54, Grube discloses an apparatus and method for effecting communications among a plurality of remote stations where Fig. 1 shows a semiconductor structure 20 that includes a moncorystalline substrate 22, accommodating buffer layer 24 comprising a monocrystalline material and a layer 26 of a monocrystalline compound semiconductor material. Structure 20 also includes an amorphous intermediate layer 28 positioned between substrate 22 and accommodating buffer layer 24. Structure 20 may also include a template layer 30 between the accommodating buffer layer and compound semiconductor layer 26. Substrate 22 is a monocrystalline semiconductor wafer which can be of a material from Group IV of the periodic table. Amorphous intermediate layer 28 is ground on substrate at the interface between substrate 22 and the growing accommodating buffer layer by

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the oxidation of substrate during the growth of layer 24. Accommodating buffer layer 24 is preferably a monocrystalline oxide or nitride material selected for its crystalline compatibility with the underlying substrate and with the overlying compound semiconductor material.

Thickness of amorphous interface layer 28 is sufficient to relieve strain attributed to mismatches between the lattice constants of substrate 22 and accommodating buffer layer 24.

Grube does not specifically disclose the compound semiconductor layer to be piezoelectric. However, Suzuki discloses silicon-based functional matrix substrate and optical integrated device where a single-crystal silicon, and a semiconductor light emitting device bonded to a region of single-crystal silicon, where the optical integrated oxide device includes a piezoelectric oxide thin film.

It would have bee obvious to one of having ordinary skill in the art to specifically disclose the compound semiconductor device as piezoelectric in Grube as taught by Suzuki in order to have a semiconductor device that can convert electrical energy/movement into mechanical energy/movement or the vice versa.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (703) 305-3868. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

FE August 9, 2002

> NATHAN J. FLYNN SUPERVISORY PATENT EXAMINER TECHNOLOGY CENTER 2800

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